



CPSC203 – Introduction to Problem Solving and Using Application Software

Fall 2009

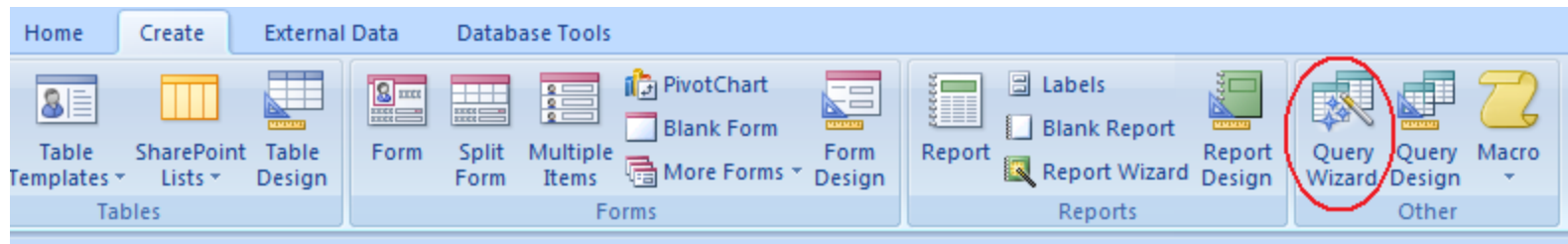
Tutorial 25, Mehrdad Nurolahzade

Introduction

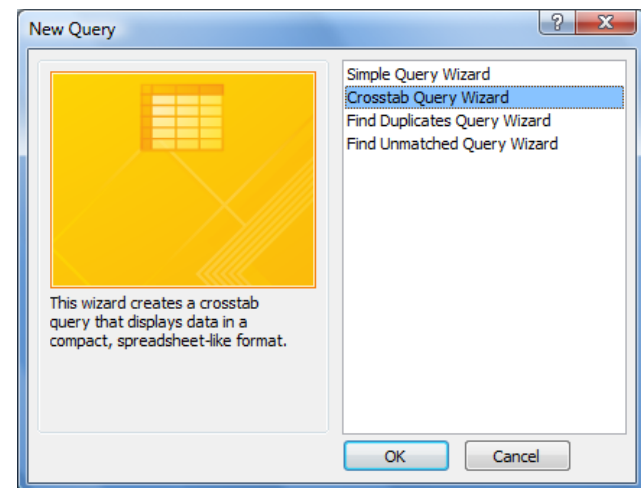
- Cross-tab queries
- Custom calculations

Crosstab Queries (1)

- To create a cross-tab query, select **Query Wizard** from **Create** menu



- In the New Query window select **Crosstab Query Wizard** and press **OK**



Crosstab Queries (2)

- Select the table/query that contains the fields you want and press **Next**

Which table or query contains the fields you want for the crosstab query results?

To include fields from more than one table, create a query containing all the fields you need and then use this query to make the crosstab query.

Query: qry1a_selAllFromPublishers
Query: qry1b_AltSelAllFromPublishers
Query: qry1c_selFromPublishers
Query: qry2_selFromPublishersofCA
Query: qry3_cartesianprodFromPublisherAndTitles
Query: qry4_selFromPublisherAndTitles
Query: qry4a_altselFromPublisherAndTitles
Query: qry4b_selFromPublisherAndTitlesWConstr

View
☐ Tables ☒ Queries ☐ Both

Sample:

	Header1	Header2	Header3
	TOTAL		

Cancel < Back Next > Finish

Crosstab Queries (3)

- Select from the **Available Fields** list the fields you wish to display as row headings by adding them to the **Selected Fields** list and press **Next**

Crosstab Query Wizard

Which fields' values do you want as row headings?

You can select up to three fields.

Select fields in the order you want information sorted. For example, you could sort and group values by Country and then Region.

Available Fields:

- title_name
- advance

Selected Fields:

- pub_name

Sample:

pub_name	Header1	Header2	Header3
pub_name1	TOTAL		
pub_name2			
pub_name3			
pub_name4			

Buttons: Cancel, < Back, Next >, Finish

Crosstab Queries (4)

- Specify a field to display values for the column heading and press **Next**

Crosstab Query Wizard

Which field's values do you want as column headings?

For example, you would select Employee Name to see each employee's name as a column heading.

title_name
advance

Sample:

pub_name	advance1	advance2	advance3
pub_name1	TOTAL		
pub_name2			
pub_name3			
pub_name4			

Cancel < Back Next > Finish

Crosstab Queries (5)

- Specify the type of calculation to perform and which field and press **Next**

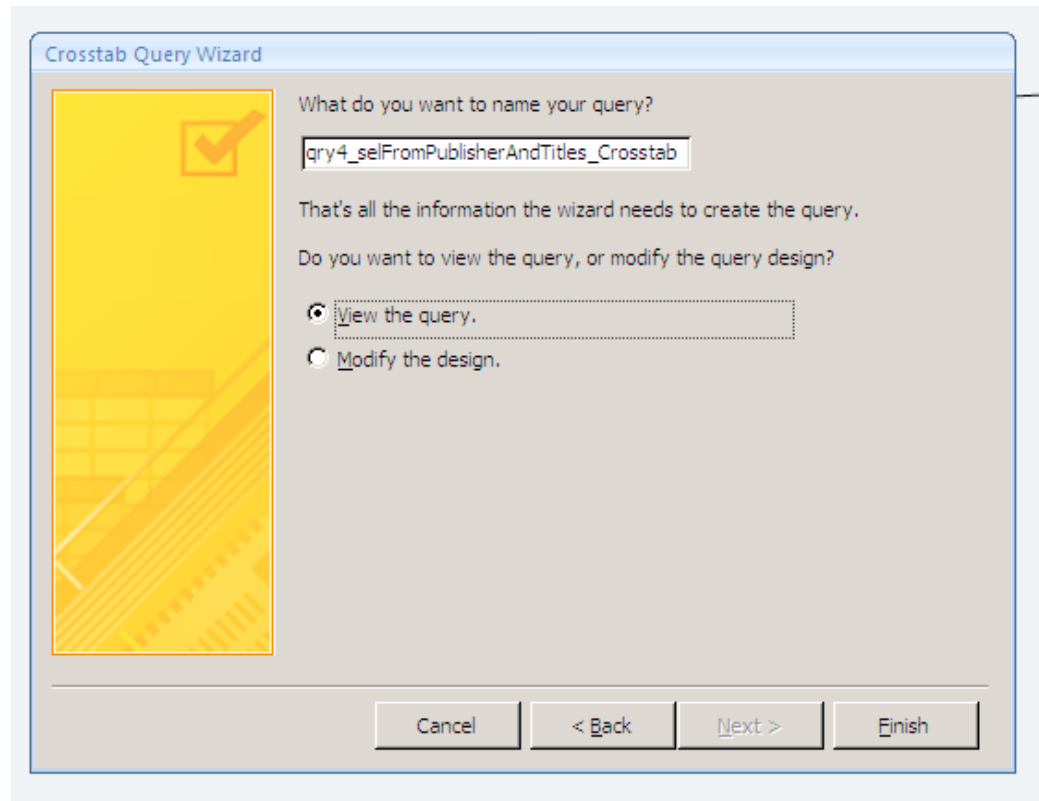
The screenshot shows the 'Crosstab Query Wizard' dialog box. It has a title bar 'Crosstab Query Wizard'. Inside, there's a text area on the left with instructions: 'What number do you want calculated for each column and row intersection?' and 'For example, you could calculate the sum of the field Order Amount for each employee (column) by country and region (row)'. Below this is a checkbox 'Do you want to summarize each row?' which is checked, with the text 'Yes, include row sums.' next to it. To the right of the text area are two list boxes: 'Fields:' containing 'title_name' and 'Functions:' containing 'Count', 'First', 'Last', 'Max', and 'Min'. At the bottom, there's a 'Sample:' section with a yellow background. It contains a table with the following data:

pub_name	advance1	advance2	advance3
pub_name1	Count(title_name)		
pub_name2			
pub_name3			
pub_name4			

At the bottom of the dialog are four buttons: 'Cancel', '< Back', 'Next >', and 'Finish'.

Crosstab Queries (6)

- Specify a name for your query and press **Finish**



Crosstab Example (1)

- Create a new query that contains all the fields from tables **Customer**, **Item**, and **Order** in the example database
- Create a new crosstab query from the above query
- Select **Customer.CustomerName** for row heading
- Select **Item.ItemName** for column heading
- Select **Order.Quantity** for cell value
- Select **Sum** for function

CustomerItemQuantity_Crosstab					
CustomerName	Total Of Quantity	Sky Blue Twin Bed	Student Chair	Student Desk	Walnut Chest
David Fox	7	1	2	1	3
James King	3	1		2	
Sara Fint	2		2		

Crosstab Example (2)

- Create a crosstab query that shows number of ordered items per order status

ItemName	Total Of Quantity	Cancelled	Delivered Successfully	Delivered Sucessfully	Processing
Sky Blue Twin Bed	2	1		1	
Student Chair	4		2		2
Student Desk	3	1	1		1
Walnut Chest	3	3			

- Answer:
 - Rows: *Item.ItemName*
 - Columns: *Order.Status*
 - Cells: *Order.Quantity*
 - Function: *Sum*

Crosstab Example (3)

- Create a crosstab query that shows number of number of times customers ordered each item

CustomerName ▾	Total Of OrderID ▾	Sky Blue Twin Bed ▾	Student Chair ▾	Student Desk ▾	Walnut Chest ▾
David Fox	4	1	1	1	1
James King	3	1		2	
Sara Fint	1		1		

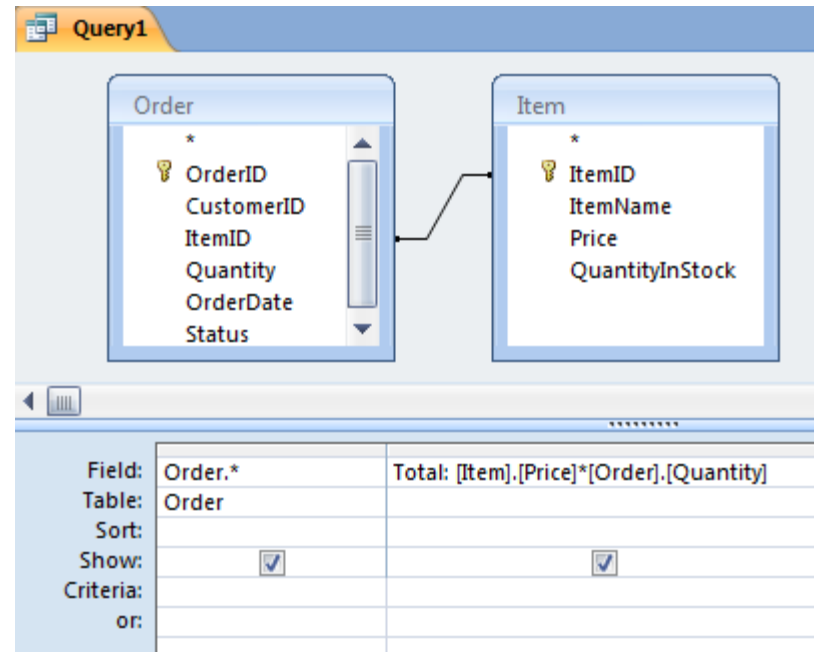
- Answer:
 - Rows: *Customer.CustomerName*
 - Columns: *Item.ItemName*
 - Cells: *Order.OrderID*
 - Function: *Count*

Custom Calculations (1)

- New fields can be added to a query result based on a calculation on existing fields
- Example: Create a new query that shows all orders together with their **Total** value

Query1							
OrderID	CustomerID	ItemID	Quantity	OrderDate	Status	Total	
	1	1	1	10/12/2009	Delivered Sucessfully	\$120.00	
8	3	1	1	10/6/2009	Cancelled	\$120.00	
2	1	2	1	10/13/2009	Cancelled	\$85.00	
4	3	2	1	10/12/2009	Delivered Successfully	\$85.00	
6	1	2	1	10/12/2009	Processing	\$85.00	
3	2	3	2	10/11/2009	Processing	\$130.00	
7	3	3	2	10/11/2009	Delivered Successfully	\$130.00	
5	3	4	3	10/8/2009	Cancelled	\$270.00	
*(New)							

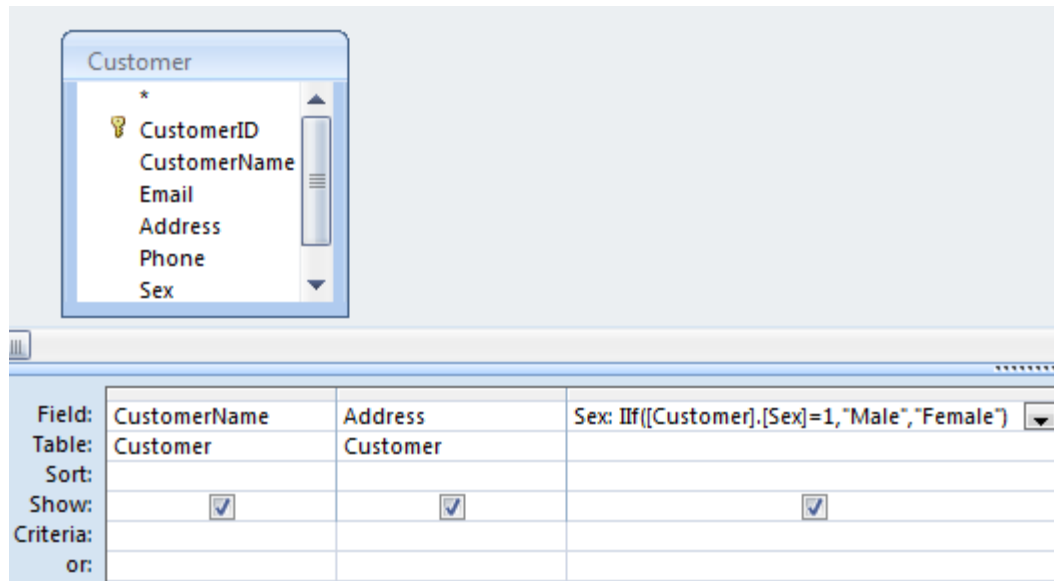
Custom Calculations (2)



```
SELECT Order.*, Order.Quantity*Item.Price AS Total
FROM Order, Item
WHERE Order.ItemID=Item.ItemID
```

IF Statement (1)

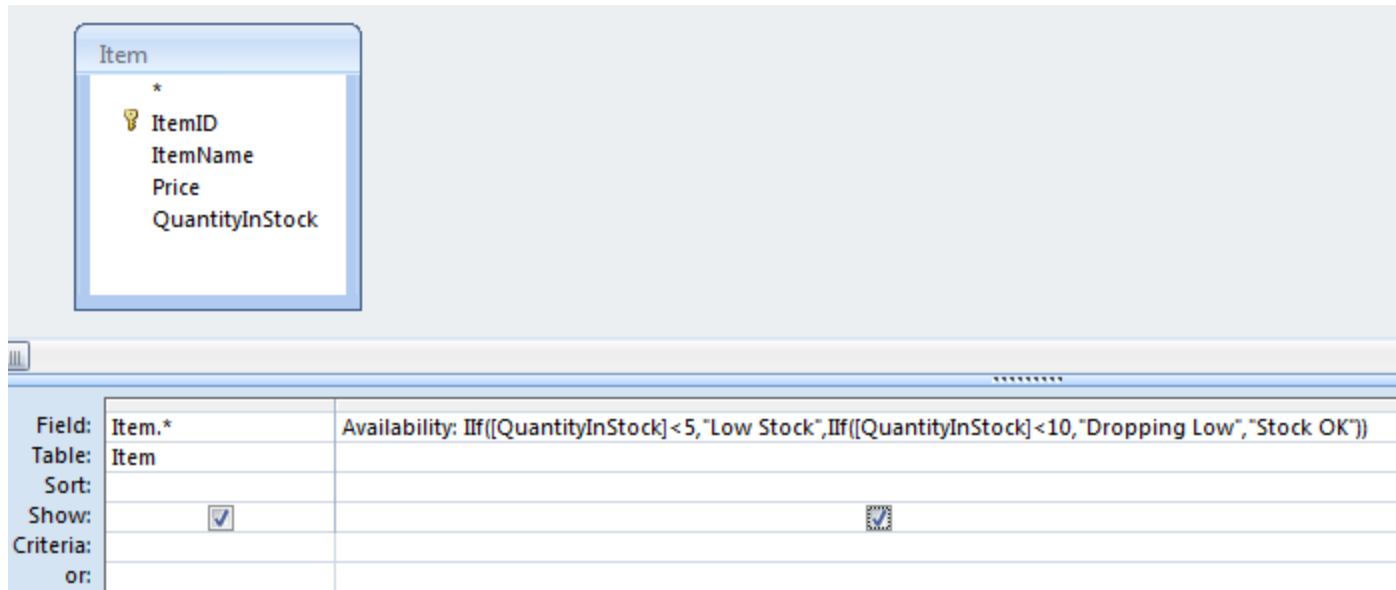
- *IIf(Condition, True Clause, False Clause)*



```
SELECT CustomerName, Address, IIf(Sex=1, "Male", "Female") AS Sex
FROM Customer
```

Nested IF Statement

- If item quantity in stock less than 5, then item availability is “Low Stock”; if item quantity in stock less than 10, then item availability is “Dropping Low”; otherwise item availability is “Stock OK”



The screenshot shows a database management interface. At the top, a table structure for 'Item' is displayed with fields: ItemID (primary key), ItemName, Price, and QuantityInStock. Below this, a query result is shown. The query is: `SELECT Item.*, IIf(QuantityInStock<5,"Low Stock",IIf(QuantityInStock<10,"Dropping Low","Stock OK")) AS Availability FROM Item`. The result table has two columns: 'Field' and 'Table'. The 'Field' column contains 'Item.*' and the 'Table' column contains 'Item'. The 'Show' column has a checked checkbox. The 'Criteria' and 'or' columns are empty.

Field:	Item.*	Availability: IIf([QuantityInStock]<5,"Low Stock",IIf([QuantityInStock]<10,"Dropping Low","Stock OK"))
Table:	Item	
Sort:		
Show:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Criteria:		
or:		

```
SELECT Item.*, IIf(QuantityInStock<5,"Low Stock",IIf(QuantityInStock<10,"Dropping  
Low","Stock OK")) AS Availability  
FROM Item
```